

PRACTICE TEST 3, CHAPTER 6*Beginning and Intermediate Algebra* by Elayn Martin-Gay, 4th edition

Completely factor each polynomial.

1. $6x^2y - 9x^4y^3$
2. $25x^3y^5 + 15x^3y^2$
3. $ab - ac + 3b - 3c$
4. $2ab^2 - 6ac + b^2 - 3c$
5. $a^2 + 7a - 18$
6. $t^2 + 5t + 5$
7. $2p^2 - 3p - 2$
8. $3h^2 + 19h - 14$
9. $64y^2 - 16y + 1$
10. $x^2 + 5xy - 24y^2$
11. $4x^2 - 4x - 80$
12. $p^2q^2 - 14pq^2 + 33q^2$
13. $x^4 - 625$
14. $x^2 - 4$
15. $49 + x^2$
16. $x^3 + 1$
17. $x^3 - 125$
18. $27y^3 - 125$

Solve each equation using the zero product rule.

19. $(x - 3)(x + 2) = 0$
20. $(4x - 1)(3x + 2) = 0$
21. $x^2 + 10x + 21 = 0$
22. $(w - 8)(w + 2) = 24$
23. The length of a rectangular room is 10 yd more than the width. If the area of the room is 200 yd², what are the dimensions of the room?
24. If five times a number is added to the square of the number, the result is 24. Find all such numbers. Solve by using the quadratic formula.

MATH 0304
PRACTICE TEST 3 ANSWERS

1. $3x^2y(2-3x^2y^2)$
2. $5x^3y^2(5y^3+3)$
3. $(a+3)(b-c)$
4. $(b^2-3c)(2a+1)$
5. $(a+9)(a-2)$
6. prime
7. $(p-2)(2p+1)$
8. $(h+7)(3h-2)$
9. $(8y-1)^2$
10. $(x+8y)(x-3y)$
11. $4(x-5)(x+4)$
12. $q^2(p-3)(p-11)$
13. $(x^2+25)(x+5)(x-5)$
14. $(x-2)(x+2)$
15. prime
16. $(x+1)(x^2-x+1)$
17. $(x-5)(x^2+5x+25)$
18. $(3y-5)(9y^2+15y+25)$
19. $x=3$ $x=-2$
20. $x=\frac{1}{4}$ $x=-\frac{2}{3}$
21. $x=-7$ $x=-3$
22. $w=10$ and $w=-4$
23. 10 x 20 yards
24. $x=-8$ $x=3$